

REMARKS

Reconsideration and allowance of the above-referenced application are respectfully requested.

The indication that claims 1-5 are allowed is noted with appreciation. These claims are retained unamended, and claim 6 has been amended. Claims 16-19 have been added.

Claim 6 was rejected under 35 U.S.C. 103(a) as being unpatentable over Brailsford (U.S. Pat. No. 4,475,068) in view of Bornand (U.S. Pat. No. 5,605,614) and further in view of Tai et al. (U.S. Pat. No. 6,094,116). This rejection is traversed.

As presented, independent claim 6 is directed to a DC motor having a MEMS relay that includes "a springing beam etched on the substrate, said springing beam directly connected to the substrate, where said springing beam is formed of permalloy material". Descriptions of the springing beam connected to the substrate are given, for example, on page 14, lines 21-24, and on page 15, lines 13-16. These portions of the specification explain a way of producing a springing beam on a substrate that may be used as part of a MEMS relay.

The Examiner, on page 4 of the office action, made specific reference to the Tai patent. In contrast to applicants' invention recited in claim 6, Tai discloses a cantilever beam 6 that is coupled to a substrate by two intervening layers, i.e., "an upper holding electrode 20 separated by an insulating layer 21 from the end of the cantilever beam 6" (Tai at column 7, lines 8-11; figures 3C and 3D). Consequently, Tai fails to disclose or suggest a DC motor having a MEMS relay, as recited in claim 6, that includes "a springing beam etched on the

substrate, said springing beam directly connected to the substrate, where said springing beam is formed of permalloy material".

The remaining art of record fails to disclose or suggest the combination of features recited in independent claims 6. Accordingly, claim 6 is allowable for at least the reasons discussed above. Claims 16-19 depend either directly or indirectly from independent claim 6. Claims 16-19 include features similar to allowed claims 2-5. Accordingly, dependent claims 16-19 are allowable for the reasons that independent claim 6 is allowable and for reciting allowable subject matter in their own right. Independent consideration and allowance of the dependent claims are requested.

Accordingly, all of the pending claims are now in condition for allowance. A formal notice to that effect is respectfully solicited.

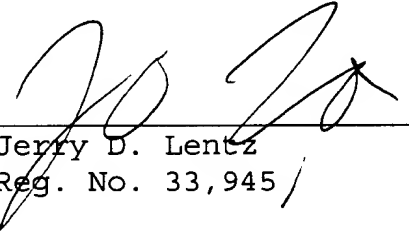
Attached is a marked-up version of the changes being made by the current amendment.

Applicant asks that all claims be allowed. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date: \_\_\_\_\_

8/20/02

  
\_\_\_\_\_  
Jerry D. Lentz

Reg. No. 33,945

Fish & Richardson P.C.  
PTO Customer No. 20985  
4350 La Jolla Village Drive, Suite 500  
San Diego, California 92122  
Telephone: (858) 678-5070  
Facsimile: (858) 678-5099

10203828.doc

Version with markings to show changes made

In the claims:

Claim 6 has been amended as follows:

6. (Amended) A DC motor comprising:
  - a plurality of windings;
  - at least one microelectronic mechanical system (MEMS) relay connected electrically to at least one of the windings and to power, where each relay includes:
    - at least one substrate formed from a nonconductive or semiconductive material;
    - a springing beam etched on the substrate, said springing beam directly connected to the substrate [comprising one or more anchors in direct contact with said substrate], where said springing beam is [and said one or more anchors are] formed of permalloy material; and
    - two electrically conductive elements, one formed on the springing beam, that together define at least two switching states, including an open state in which the conductive elements are physically separated from each other, and a closed state in which the conductive elements physically contact each other;
    - where the springing beam includes a magnetic material which, in the presence of a magnetic field, creates an actuation force that causes the electrically conductive elements to apply power to or remove power from at least one of the windings by switching from one of the switching states to another of the switching states; and

a magnetic rotor having at least one pole positioned to induce a magnetic field in each MEMS relay when passing by the relay.